



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/749,293	12/30/2003	Xintian E. Lin	042390.P17464	9816
45209	7590	12/12/2007	EXAMINER	
INTEL/BLAKELY			NGO, NGUYEN HOANG	
1279 OAKMEAD PARKWAY			ART UNIT	PAPER NUMBER
SUNNYVALE, CA 94085-4040			2616	
			MAIL DATE	DELIVERY MODE
			12/12/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/749,293

Applicant(s)

LIN ET AL.

Examiner

Nguyen Ngo

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 November 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 26 and 27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 26 and 27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

This communication is in response to the election of 11/15/2007. All changes made to the Claims have been entered. Accordingly, Claims 1-9, and 26-27 are currently pending in the application.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3 and 7-9 and 26-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Alastalo et al. (US 2001/0047424), hereinafter referred to as Alastalo.

Regarding claim 1, Alastalo discloses a device, comprising: a scheduler (access point scheduler for performing various timing operations, page 2 [0021]) in an access point to provide a schedule of variable length packets based on transmission times to send on spatial channels to mobile stations (access points broadcasts general information on the current frame, e.g. on uplink and downlink time slots assigned for terminals MT1-MT4, page 2 [0021]-[0022] and page 3 [0030] and abstract).

Regarding claim 2, Alastalo discloses the device of claim 1 further including adaptive antenna arrays used in conjunction with a beam forming algorithm to achieve spatial

diversity and implement Spatial-Division Multiple-Access (SDMA), wherein the adaptive antenna array changes beam weights based on the schedule (access point applies SDMA for simultaneous transmission to M different terminals, page 1 [0002] and page 3 [0030]-[0036]).

Regarding claim 3, Alastalo discloses the device of claim 1 wherein the scheduler in the downlink provides the schedule of transmission intervals for different mobile stations (M different terminals, page 3 [0030] and abstract).

Regarding claim 7, 8, Alastalo discloses the device of claim 1 wherein the access point sends multiple schedules in a protected time interval to the mobile stations (method for arranging communication between terminals and an access point in a communication system applying data transmission frames which comprises downlink time slots for performing data transmission from the AP to the terminals, page 7 [0061]-[0062] and page 8 claim 1).

Regarding claim 9, Alastalo discloses the device of claim 1 wherein the access point fills spatial channels using the data packets buffered for all the mobile stations (transmission data buffers, page 7 [0060]).

Regarding claim 26, Alastalo discloses a method for a Medium Access Control (MAC) protocol (MAC frame, page 2 [0012]), comprising: scheduling variable length packets in

an access point based on transmission times to send on spatial channels to mobile stations (access points broadcasts general information on the current frame, e.g. on uplink and downlink time slots assigned for terminals MT1-MT4, page 2 [0021]-[0022] and page 3 [0030] and abstract).

Regarding claim 27, Alastalo discloses the method of claim 26, further including: retrieving antenna resources in the access point to form spatial channels developed on the fly for a waiting mobile station (access point applies SDMA, page 3 [0030]-[0036]).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alastalo et al. (US 2001/0047424), hereinafter referred to as Alastalo.

Regarding claim 4, 5, and 6, Alastalo fails to specifically disclose wherein the schedule accounts for traffic information to the mobile stations based on packet size/queue size/and priority. However it is well known in the art to base transmission schedules on such traffic information as packet size/queue size/and priority. It would have thus been obvious to have the schedule account for traffic information as mentioned above in order to efficiently and correctly transmit data from an access point to a terminal.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nguyen Ngo whose telephone number is (571)272-8398. The examiner can normally be reached on Monday-Friday 7am - 3:30 pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Firmin Backer can be reached on (571)272-6703. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Application/Control Number:
10/749,293
Art Unit: 2616

Page 6

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

N.N.
*****Nguyen Ngo**
United States Patent & Trademark Office
Patent Examiner AU 2663
(571) 272-8398



BRIAN NGUYEN
PRIMARY EXAMINER